

# RACT- CAIR- BART Stakeholder Meeting January 31, 2006

Massachusetts Department of Environmental  
Protection  
Bureau of Waste Prevention

# Purpose of Meeting

Over the next 1-3 years, states must revise their State Implementation Plans (SIPS) to address requirements of 3 EPA rules:

- 8-hour Ozone Standard
- Clean Air Interstate Rule (CAIR)
- Regional Haze/Best Available Retrofit Technology (BART) rules

# Purpose of Meeting

- Provide background on upcoming SIP requirements;
- Provide an overview of ongoing planning to meet these SIP requirements;
- Preview potential strategies to meet 3 EPA rules that may affect MA stakeholders.
- Identify questions and issues.

# Purpose of Meeting

Today's invited stakeholders:

- Industrial, commercial or institutional boilers (ICI boilers) with capacity  $\geq 100\text{mmBtu/hr}$ ;
- Electric Generating Units (EGUs);
- MA NO<sub>x</sub> Budget Program participants (310 CMR 7.28);
- “BART eligible” sources under the Regional Haze program.

## 8-Hour Ozone – MA Status

- MA is non-attainment statewide with a classification of “moderate.”
- MA ozone SIP revisions required:
  - September 2006 – Reasonably Available Control Technology (RACT) SIP
  - September 2007 - Attainment Demonstration SIP showing how Eastern and Western MA non-attainment areas will meet 8-hour standard by 2010

# 8-Hour Ozone – OTC Planning

What are we doing to meet ozone SIP requirements?

- MassDEP is participating in Ozone Transport Commission (OTC) regional planning process (12 states and D.C.).
- OTC process is looking at 2 questions:
  1. What amount of additional emission reductions will be needed to bring OTC states into attainment?
  2. What regional control strategies should be adopted to achieve additional reductions?

# 8-Hour Ozone – OTC Planning

1. What amount of additional emission reductions will be needed for attainment within OTC region?
  - Multi-state emissions inventory and modeling effort.
  - Modeling to assess status of each OTC state by 2009 accounting for growth as well as emission reductions expected by then (“on-the books/on-the way” measures).
  - Results will show whether reductions beyond those already expected will be needed to attain ozone standard.
  - Modeling not completed but expectation is that further reductions will be needed in some states.

## 8-Hour Ozone – OTC Planning

2. What regional control strategies should be adopted to achieve the additional reductions?
  - Reviewing all sources – mobile, point and area – to see what additional reductions are feasible.
  - Includes review of reductions from EGUs that go beyond EPA's rule to reduce EGU emissions (CAIR).
  - Includes review of RACT for sources of NO<sub>x</sub> and VOC emissions.

# 8-Hour Ozone - RACT

What is RACT (Reasonably Available Control Technology)?

- Required on existing stationary emission sources in non-attainment areas.
- Defined as the lowest emission level a facility is capable of meeting through the application of control technology, considering both technical and economic feasibility.
- Section 183(c) of the CAA requires EPA to “revise and update...[RACT] as the Administrator determines necessary.”

# 8-Hour Ozone - RACT

1995 NO<sub>x</sub> RACT (under 1-hour ozone standard):

- RACT required for facilities major for NO<sub>x</sub> emissions

MA 1995 RACT Categories:

- Reciprocating Engines
- Combustion Turbines
- Municipal Waste Incinerators
- Glass Furnaces
- Boilers (>20 mmBtu/hr)

# 8-Hour Ozone - RACT

1995 Boiler RACT based on:

- Energy input capacity
- Fuel type
- Combustion approach (stoker-fired, face-fired, etc...)
- Heat release rate
- Potential Emissions

Examples:

- Small boilers with nameplate capacity 20-50 mmBtu/hr
  - » NO<sub>x</sub> RACT = DEP-approved annual tune-up
- Tangential fired coal burning dry bottom boilers with nameplate capacity  $\geq$  100mmBtu/hr
  - » NO<sub>x</sub> RACT = 0.38 lbs NO<sub>x</sub>/mmBtu

# 8-Hour Ozone - RACT

Now looking at RACT again - two purposes:

- States must review RACT controls to meet EPA's 8-hour ozone RACT SIP requirement.
- OTC is reviewing RACT categories to assess potential for tighter RACT controls within OTC as regional attainment measure.

# 8-Hour Ozone – RACT

## State RACT SIP Requirement:

- MA and other states that adopted RACT under 1-hour ozone standard may not need to adopt new controls.
- But - must review whether what was considered RACT when previously adopted is still RACT – are there new technologies, less costly controls, other factors?
- May decide to adopt new state RACT limits or that nothing more is needed to satisfy RACT.
- Submit our determination to EPA as a RACT SIP.

# 8-Hour Ozone – OTC Planning

## OTC Review of RACT in OTC Region:

- reviewing multiple RACT categories as possible candidates for tighter NO<sub>x</sub> and VOC limits
- OTC Control Strategies Committee stakeholder meeting 1/24/06 discussed a number of categories and controls ([www.otcair.org](http://www.otcair.org)).
- Categories include: metal production facilities; lime and cement kilns; glass furnaces; printing, etc.
- Boilers are under consideration; may recommend tighter emission rates for some boiler sizes and types.

## 8-Hour Ozone – Timeline

- Late Feb. 2006 - OTC Commissioners initial recommendations for regional control strategies, including RACT.
- June 2006 – OTC Commissioners final recommendations for regional control strategies. May include ICI RACT measures – or not.
- Jan. – July 2006 - MA review of state RACT controls adopted under 1-hour ozone standard.
- September 2006 - RACT SIP due.

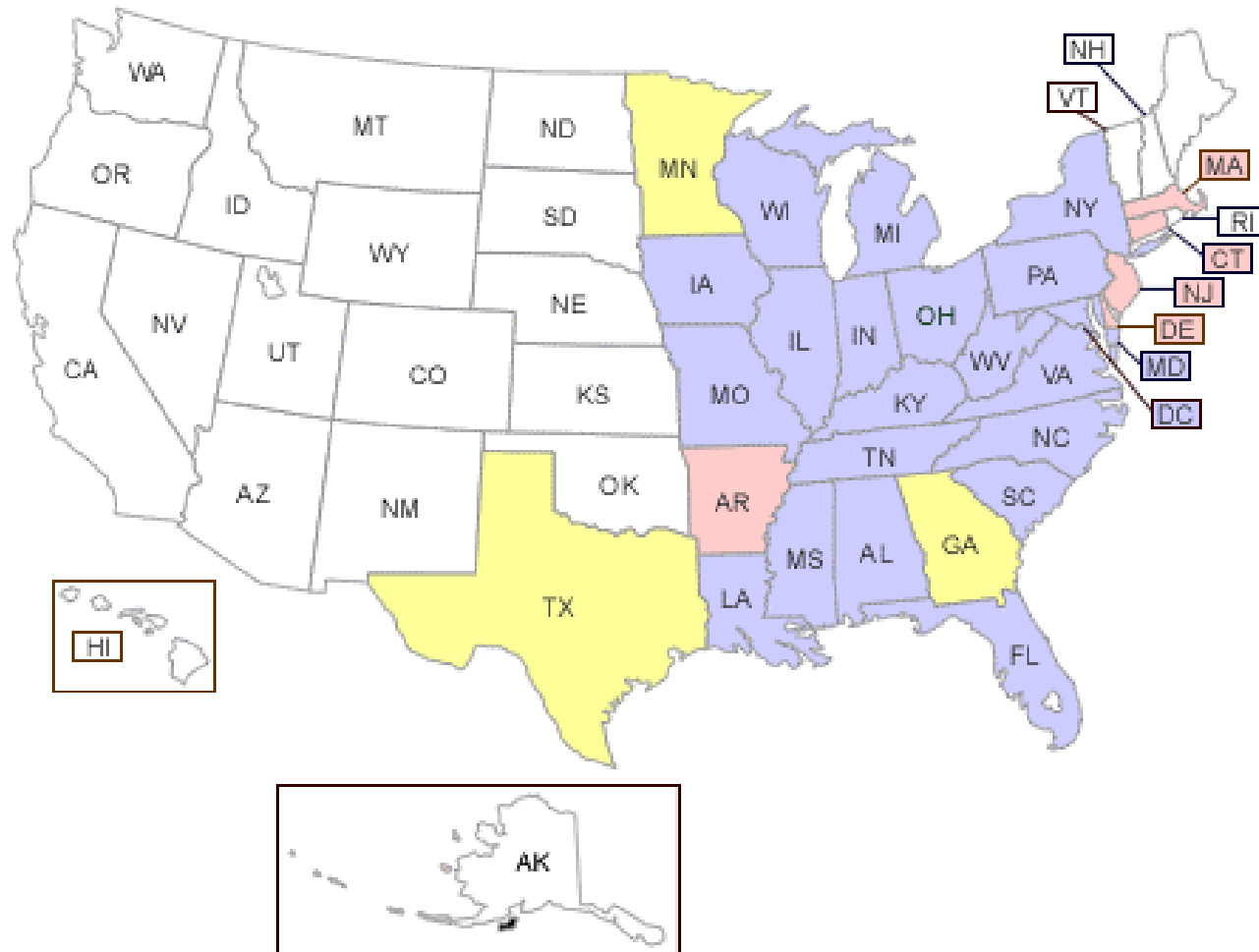
## 8-hour Ozone – Next Steps

- After OTC Commissioners make initial recommendations for RACT measures (Feb.), MassDEP will follow-up with ICI boiler facilities (and other source categories) to discuss OTC recommendations.
- MassDEP may propose regulations taking into account OTC recommendations and our in-state assessment of current MA RACT requirements.

# CAIR – Background

- 5/12/05 final Clean Air Interstate Rule (CAIR) published.
- EPA found that 28 states “contribute significantly” to non-attainment of 8-hour ozone and/or PM<sub>2.5</sub> standards in downwind states.

# States Covered by CAIR



■ Ozone and PM<sub>2.5</sub> – Annual caps for SO<sub>2</sub> & NO<sub>x</sub>; ozone season cap for NO<sub>x</sub>

■ Ozone only – Ozone season cap for NO<sub>x</sub>; ■ M<sub>2.5</sub> only – Annual caps for SO<sub>2</sub> & NO<sub>x</sub>

# CAIR – Background

- EPA determined the amount of emission reductions that each contributing state must achieve.
- Based on the level of reductions that can be achieved with “highly cost-effective” controls on EGUs.
- But does not require that states achieve the reductions from EGUs.

# CAIR – Background

- CAIR sets a cap for NO<sub>x</sub> and SO<sub>2</sub> *annual* emissions from EGUs in states that contribute to PM 2.5 non-attainment.
- 2-phase declining annual emission caps:
  - Phase 1 NO<sub>x</sub> cap – 2009 - 2014
  - Phase 2 NO<sub>x</sub> cap – 2015 and thereafter
  - Phase 1 SO<sub>2</sub> cap – 2010 –2014
  - Phase 2 SO<sub>2</sub> cap – 2015 and thereafter

# CAIR – Background

- CAIR sets a cap for NO<sub>x</sub> *seasonal* emissions from EGUs in states that contribute to ozone non-attainment.
- 2-phase declining seasonal emission caps:
  - Phase 1 2009 – 2014
  - Phase 2 2015 and thereafter

# CAIR – MA Status

- MA found to contribute only to ozone non-attainment in other states. Subject to CAIR cap on ozone season emissions.
- EPA used a fuel-adjusted heat input methodology to set caps: 1999-2002 heat input multiplied by fuel-adjustment factors of: 1.0 for coal, 0.6 for oil and 0.4 for gas.
- Many states including MA not happy with use of fuel-adjustment factors.

## CAIR – MA Status

- MA CAIR Ozone Season NO<sub>x</sub> Budgets (tons):  
2009 – 2014: 7,551  
2015 and beyond: 6,293
- MA NO<sub>x</sub> SIP Call Budget: 12,861
- For 2009, 5,310 fewer NO<sub>x</sub> allowances for MA sources under CAIR ozone-season program than under NO<sub>x</sub> budget program.

# CAIR BUDGET

	State trading budget for 2009–2014 (tons)	State trading budget for 2015 and thereafter (tons)
Alabama	32,182	26,818
Arkansas	11,515	9,596
Connecticut	2,559	2,559
Delaware	2,226	1,855
District of Columbia	112	94
Florida	47,912	39,926
Illinois	30,701	28,981
Indiana	45,952	39,273
Iowa	14,263	11,886
Kentucky	36,045	30,587
Louisiana	17,085	14,238
Maryland	12,834	10,695
Massachusetts	7,551	6,293
Michigan	28,971	24,142
Mississippi	8,714	7,262
Missouri	26,678	22,231
New Jersey	6,654	5,545
New York	20,632	17,193
North Carolina	28,392	23,660
Ohio	45,664	39,945
Pennsylvania	42,171	35,143
South Carolina	15,249	12,707
Tennessee	22,842	19,035
Virginia	15,994	13,328
West Virginia	26,859	26,525
Wisconsin	17,987	14,989

# CAIR BUDGET

# CAIR – Sources

## CAIR Sources:

- EGU = fossil-fuel fired boiler or turbine serving a generator > 25 MW nameplate capacity producing electricity for sale.
- Municipal waste combustors included but EPA is proposing to exempt them.
- Cogeneration units, as defined, are exempt.

# CAIR – SIP Requirements

Other units affected:

- NO<sub>x</sub> Budget (SIP Call) Program Sources –
  - EPA's CAIR trading program will replace the NO<sub>x</sub> Budget Program (310 CMR 7.28)
  - State option whether to include all NO<sub>x</sub> Budget Program participants in CAIR program
- Potential opt-in for sources that do not meet EGU definition if: vent through a stack and meet Part 75 monitoring and recordkeeping requirements.

# CAIR – SIP Requirements

- State must submit a SIP showing how it will achieve CAIR-required reductions.
- States can achieve the reductions however they choose – control EGUs or control other sources.
- If state controls only EGUs, it must adopt the state cap/budget set in CAIR.
- If a state chooses to achieve reductions from other than EGUs, CAIR says how to set state CAIR budget.

# CAIR – SIP Requirements

- EPA has provided a model cap and trade rule for states to adopt to achieve EGU emissions
- If a state wants its EGUs to participate in the CAIR cap and trade program, it must adopt EPA's model rule in its CAIR SIP.
- Model rule sets out most program parameters: accounts, permits, monitoring, reporting, etc.

# CAIR – SIP Requirements

States have flexibility to revise EPA's model rule for certain program elements:

- Whether to include NO<sub>x</sub> SIP Call sources that do not meet CAIR EGU definition in the CAIR ozone season NO<sub>x</sub> program.
- Whether to allow sources that do not meet CAIR EGU definition to opt-in to the CAIR trading program.
- Allocation method for state allowances (input vs. output, set-asides for renewables, etc.)

# CAIR – SIP Timing

- Final CAIR rule (3/05) requires state CAIR SIPs be filed by September 2006
- However, in April 2005 EPA proposed a Federal Implementation Plan (FIP) incorporating CAIR provisions.
- Legal rationale for FIP: states failed to submit SIPs to address interstate transport following adoption of PM<sub>2.5</sub> standard in 1997.

# CAIR – SIP Timing

- March 2006 – EPA will promulgate final FIP rule.
- FIP will impose federal CAIR program in states until EPA has approved a state's CAIR SIP.
- FIP will set state CAIR caps/budgets for 2009 and subsequent allocation years.
- But EPA will not record 2009 allowances to facility accounts until December 2007 – giving states time to get their SIPs approved before then, including state preferences for allocations.

# CAIR – SIP Options

With FIP, states now have SIP options:

- Full CAIR SIP – per CAIR Final Rule.

State adopts state rule establishing CAIR trading program that includes all provisions in EPA's model rule (but may include state preferences for allocation.)

- Abbreviated CAIR SIP – per proposed CAIR FIP and final FIP to be issued 3/06.

EPA model rule goes into effect covering all provisions for state cap and trade program. By 3/07 state may submit CAIR SIP with state rule covering only state allocation preferences.

# CAIR – SIP Options

MA anticipated CAIR SIP approach:

- Not planning to file full CAIR SIP by 9/06.
- Will do a rulemaking to adopt CAIR Ozone Season NOx trading program.
- Will file abbreviated CAIR SIP by March 2007
- Expect to propose a state-defined output-based NOx allowance allocation methodology with set-asides (as in 310 CMR 7.28).
- Will sunset MA NOx Budget Program - 310 CMR 7.28.

# CAIR – SIP Issues

MA CAIR SIP issues:

- Should MA CAIR trading program include all NOx Budget Program sources (310 CMR 7.28)? (There are a number of small units (< 25MW) in current program.)
- Should MA allow sources not meeting EGU definition to opt-in to CAIR?
- Allocation details and timing

# CAIR – OTC Issues

CAIR SIP Issues related to OTC planning:

- OTC reviewing potential for EGUs reductions greater than and/or sooner than CAIR to address non-attainment in OTC states after CAIR.
- Straw proposal under consideration (handout).
- OTC also reviewing inclusion of non-EGU large boilers in trading program (and as part of RACT review).
- Initial recommendation at Feb. 2006 OTC meeting.
- Final recommendation at June 2006 OTC meeting.

# CAIR – OTC Planning

Issues under consideration in OTC process:

- Do OTC states need additional reductions to attain by 2010?
- If so, are additional EGU reductions needed or might local (non-transport related) measures be enough?
- Waiting for modeling results and review of other potential control measures as part of 8-hour ozone planning.

# Summary

- Planning is ongoing through OTC and MANE-VU and within Mass DEP.

[www.otcair.org](http://www.otcair.org)

[www.manevu.org](http://www.manevu.org)

[www.nescaum.org](http://www.nescaum.org)

[www.ladco.org](http://www.ladco.org)

- More specific preliminary recommendations will be made at Feb. 22-23 OTC meeting.
- MassDEP will hold additional stakeholder meetings prior to June OTC meeting to discuss OTC preliminary recommendations.

# Summary

- If your facility received notice of this meeting by hard copy, please provide us with an e-mail address.
- To get on MassDEP's stakeholder e-mail list:  
[nicholas.m.bianco@state.ma.us](mailto:nicholas.m.bianco@state.ma.us)
- Today's presentations will be posted at:  
[www.mass.gov.dep/air](http://www.mass.gov.dep/air) under  
“Massachusetts Clean Air Framework”